

University of Maine at Presque Isle)
Aroostook County)
Presque Isle, Maine)
A-605-71-H-R/A (SM))

**Departmental
Findings of Fact and Order
Air Emission License**

After review of the air emissions license renewal application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

The University of Maine System in Presque Isle, Maine (UMPI) has applied to renew their Air Emission License permitting the operation of emission sources associated with their Presque Isle facility. This license renewal will include several new boilers that were previously not listed in the air license and update the license with accurate maximum design capacities based on either boiler plate information or firing rates for the boilers.

B. Emission Equipment

UMPI is authorized to operate the following #2 oil-fired equipment:

Fuel Burning Equipment

BLDG NAME	Emission Unit ID	MANUFACTURER	Date of Installation	Maximum Design Capacity MMBtu/hr	Maximum Firing Rate gal/hr	Stack No.	Blr Cert. #
EMERSON HALL	EM1	HB SMITH	1982	2.84	20.3	Em1	H4705
EMERSON HALL	EM2 *	HB SMITH	2003	3.71	26.5	Em1	H9003
FACILITIES SUPPORT BLDG	SUP1	WEIL-MCLAIN-28	1989	1.12	8.0	Sup1	H5818
FOLSOM- PULLEN HALLS	FOL1	HB SMITH-450	1968	2.24	15.9	Fm1	H2905
FOLSOM- PULLEN HALLS	FOL2	HB SMITH-450	1968	2.24	15.9	Fm1	H2906

University of Maine at Presque Isle)
 Aroostook County)
 Presque Isle, Maine)
 A-605-71-H-R/A (SM))
 2

**Departmental
 Findings of Fact and Order
 Air Emission License**

Fuel burning equipment continued....

BLDG NAME	Emission Unit ID	MANUFACTURER	Date of Installation	Maximum Design Capacity MMBtu/hr	Maximum Firing Rate gal/hr	Stack No.	Blr Cert. #
GENTILE HALL	GENT1 *	HB SMITH	2005	2.66	19.6	Gent1	H9382
GENTILE HALL	GENT2 *	HB SMITH	2005	2.66	19.6	Gent1	H9383
KELLEY COMMONS	KEL1	WEIL-MCLAIN-94	1968	2.77	19.8	Ke1	H2907
KELLEY COMMONS	KEL2	WEIL-MCLAIN-94	1968	2.77	19.8	Ke1	H2908
MERRIMAN HALL	MER1 *	HB SMITH-25	2005	1.51	10.8	Me1	H9380
MERRIMAN HALL	MER2 *	HB SMITH-25	2005	1.51	10.8	Me1	H9381
NORMAL HALL	NORM1	HB SMITH	1996	3.08	22.0	No1	H6930
PREBLE HALL	PREB2	HB SMITH-28	2005	2.44	17.4	Prb1	H6624
SOUTH HALL	SOUTH1	WEIL-MCLAIN-94	1971	2.77	19.8	So1	H3222
WIEDEN HALL	WID1	HB SMITH-350	1974	4.24	30.3	Wi1	H3497
WIEDEN HALL	WID2	HB SMITH	1978	4.97	35.5	Wi2	H4198
Stand-by Diesel	--	----	1999	1.60	11.6	--	--

* designates equipment not previously licensed

C. Insignificant Emission Sources

UMPI operates several other boilers and propane heaters at the facility's buildings, each under 1.0 MMBtu/hr heat input capacity. These boilers and heaters are mentioned only for inventory purposes and will not be included in short term emission rate calculations. These units are not listed in the license and do not need to be included in the facility's fuel use limit.

D. Application Classification

The application for UMPI includes the installation of new or modified equipment. Therefore, the license is considered to be an amendment and renewal of current

licensed emission units. The license was processed per the requirements of Chapter 115 of the Department's regulations.

UMPI is not requesting an increase in the annual fuel use limit, therefore, the facility-wide ton per year emissions will not increase. With the fuel use limit on the boilers and the operating hours restriction on the emergency generator, the facility is licensed below the major source thresholds and is considered a synthetic minor. All new units are subject to Best Available Control Technology (BACT).

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent best practical treatment (BPT), as defined in Chapter 100 of the Air Regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in Chapter 100 of the Department's regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts. UMPI will be subject to BACT requirements for several boilers that were not previously listed in the air emissions license.

Descriptions of the applicable requirements are provided below under the appropriate headings.

B. New Emission Equipment

UMPI has added two new buildings to its facility. The Gentile Hall and Merriman Hall boilers were not included in the last air license. Gentile Hall has two boilers, each rated a maximum heat input capacity of 2.7 MMBtu/hr. Merriman Hall has two boilers, each rated a maximum heat input capacity of 1.8 MMBtu/hr.

The boilers were installed in 2005, however, the boilers are less than 10 MMBtu/hr and are therefore not subject to the New Source Performance Standards (NSPS) Subpart Dc for steam generating units greater than 10 MMBtu/hr manufactured after June 9, 1989.

BACT for the new boilers is:

1. The total fuel use for the facility shall not exceed 450,000 gal/year of #2 fuel oil based on a 12 month rolling total.
2. The SO₂ emission limits are based on the firing of fuel which meets the criteria in ASTM D396 for #2 fuel oil.
3. The PM and PM₁₀ limits are derived from Chapter 103.
4. NO_x emission limits are based on data from similar #2 fired boilers of this size and age.
5. CO and VOC emission limits are based upon AP-42 data dated 9/98.
6. Visible emissions from the boilers shall not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period.

C. Existing Emission Units

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

UMPI operates all of their boilers with #2 fuel oil primarily for facility hot water and heating needs. UMPI had previously operated some boilers with coal, however, all those boilers have either been decommissioned or converted to burn #2 oil. None of the boilers are subject to the requirements of EPA New Source Performance Standard (NSPS) 40 CFR Part 60, Subpart Dc for boilers between 10 and 100 MMBtu/hr. The licensed boilers' combined design capacity is 38.2 MMBtu/hr, however, the average boiler's size is 2.4 MMBtu/hr with the largest boiler rated at 4.76 MMBtu/hr. The short-term emission limits will be based on this boiler.

The regulated pollutants emitted from the #2 oil-fired boilers are particulate matter (PM), particulate matter with a diameter smaller than ten microns (PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC). UMPI shall not exceed a maximum combustion of 450,000 gallons per year of #2 fuel oil. This fuel limit is carried over from the former license, A-605-71-E-N. The fuel oil fired in these boilers shall meet the criteria in ASTM D396 for #2 fuel oil.

Due to the individual size of the boilers, the combustion of low sulfur distillate ASTM fuel oil, and a limit of 450,000 gallons per year, emissions from these boilers are considered small and meet BPT. No additional pollution control equipment is warranted at this time. Visible emissions from the oil fired boilers' stacks shall not exceed 20% opacity on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a continuous 3-hour period.

UMPI also has a 1.26 MMBtu/hr diesel generator, designated as OLYMPIAN-D150P1, with a maximum firing rate of 9.0 gal/hour.

BPT for the Standby Generator is:

- Chapter 106 regulates fuel sulfur content, however the use of 0.05% sulfur by weight fuel is more stringent and shall be used.
- Limiting use to 500 hours/year based on a 12 month rolling total.
- PM, PM₁₀, NO_x, CO and VOC emission limits for the standby generator is based upon AP-42 data dated 10/96 for diesel engines less than 600 horsepower.
- Opacity from the standby generator shall not exceed 30% on a six (6) minute block average basis, except for two (2) six (6) minute block averages in a 3-hour period.

D. Annual Emission Restrictions

UMPI shall be restricted to the following, based on a 12 month rolling total:

- 450,000 gallons per year of ASTM D396 #2 fuel oil.
- 5,797 gallons per year of diesel fuel with a maximum sulfur content not to exceed 0.05% by weight.

Total Licensed Annual Emission for the Facility

Tons/year

(used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boilers	3.8	3.8	11.2	9.5	1.1	0.3
Back-up Generator	0.2	0.2	0.2	1.8	0.4	0.2
Total TPY	4.0	4.0	11.4	11.3	1.5	0.5

III. AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a renewal source shall be determined on a case-by case basis. Modeling and monitoring are not required for a renewal if the total emissions of any pollutant released do not exceed the following:

<u>Pollutant</u>	<u>Tons/Year</u>
PM	25
PM ₁₀	25
SO ₂	50
NO _x	100
CO	250

Based on the above total facility emissions, UMPI is below the emissions level required for modeling and monitoring.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-605-71-H-R/A subject to the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

University of Maine at Presque Isle)
Aroostook County)
Presque Isle, Maine)
A-605-71-H-R/A (SM))
7

**Departmental
Findings of Fact and Order
Air Emission License**

STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 MRSA §347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [MEDEP Chapter 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [MEDEP Chapter 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [MEDEP Chapter 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353. [MEDEP Chapter 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [MEDEP Chapter 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [MEDEP Chapter 115]
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [MEDEP Chapter 115]

- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [MEDEP Chapter 115]
- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [MEDEP Chapter 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
- A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
 - 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
 - 2. pursuant to any other requirement of this license to perform stack testing.
 - B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
 - C. submit a written report to the Department within thirty (30) days from date of test completion.
- [MEDEP Chapter 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
 - B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated

under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

- C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[MEDEP Chapter 115]

- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [MEDEP Chapter 115]
- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emission and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [MEDEP Chapter 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [MEDEP Chapter 115]

(16) **Boilers**

- A. UMPI shall limit emissions from any of the licensed boilers to the following:

Pollutant	lb/MMBtu	lb/hour
PM	0.12	0.6
PM10	--	0.6
SO2	--	1.7
NOx	--	1.5
CO	--	0.2
VOC	--	0.1

Note: The calculated maximum lb/hour emission limit is based on the largest boiler, operating at 4.97 MMBtu/hr.

- B. Fuel use shall be limited to 450,000 gallons per year of #2 fuel oil (0.14 MMBtu/gal), based on a 12-month rolling total. The fuel oil shall meet the criteria in ASTM D396 for #2 fuel oil. Fuel oil delivery receipts shall be kept to show the amount of fuel purchased along with type of fuel oil verification. [MEDEP Chapter 115]
- C. Visible emissions from each of the stacks listed in Section I.B. shall not exceed 20% opacity on a six (6) minute block average. [MEDEP Chapter 101]

(17) **Standby Generator**

- A. The standby generator shall be limited to 500 hours per year of operation (equivalent to 5,797 gallons per year of diesel fuel, 0.05% sulfur maximum), based on a 12 month rolling total. An hour meter shall be installed and operated on the standby generator. [MEDEP Chapter 115]
- B. Emissions from the standby generator shall not exceed the following:

Pollutant	lb/hr
PM	0.4
PM ₁₀	0.4
SO ₂	0.4
NO _x	5.7
CO	1.2
VOC	0.5

[MEDEP Chapter 115]

University of Maine at Presque Isle)
Aroostook County)
Presque Isle, Maine)
A-605-71-H-R/A (SM))
11

**Departmental
Findings of Fact and Order
Air Emission License**

- C. Visible emissions from the standby generator shall not exceed 30% opacity on a six (6) minute block average basis, except for two (2) six (6) minute block averages in a 3-hour period. [MEDEP Chapter 101]
- (18) UMPI shall not exceed the following fuel use limits, based on a 12 month rolling total:
- 450,000 gallons per year of ASTM D396 #2 fuel oil
 - 5,797 gallons of diesel fuel, with a maximum sulfur content of 0.05% by weight

Compliance is based on fuel receipts from the supplier documenting the quantity delivered and fuel type.
[MEDEP Chapter 115]

- (19) **Payment of Annual License Fee**
UMPI shall pay the annual air emission license fee within 30 days of **April 30th** of each year. Pursuant to 38 MRSA §353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for revocation of the license under 38 MRSA §341-D, subsection 3.

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2007.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAVID P. LITTELL, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: November 20, 2006

Date of application acceptance: December 4, 2006

Date filed with the Board of Environmental Protection: _____

This Order prepared by Edwin Cousins, Bureau of Air Quality.

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A-605-71-H-R/A (SM)

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)
12

Departmental
Findings of Fact and Order
Air Emission License